<u>Remarks</u>

Entry of this Amendment, reconsideration of the application and allowance of all claims are respectfully requested. Claims 1-20 remain pending.

Initially, Applicants gratefully acknowledge the indication of allowability of claims 6, 13 & 20 if rewritten into independent form including all the limitations of the base claim and any intervening claims. Presently, these dependent claims have not been rewritten into independent form since the amended independent claims from which they ultimately depend are believed to be in condition for allowance for the reasons set forth below.

By this paper, independent claims 1, 8 & 15 are amended to more particularly point out and distinctly claim certain aspects of the present invention. Specifically, Applicants' functionality is amended to recite that the obtaining of pixel values of the video frames occurs prior to MPEG compression encoding of the video frames. Further, Applicants' independent claims now specify functionality which includes programmably vertically filtering noise from the pixel values of the video frames prior to said MPEG compression encoding thereof. Dependent claims 3, 10 & 17 are amended to characterize that the obtaining of vertical filter coefficients includes dynamically obtaining via a host interface new vertical filter coefficients during the programmably vertically filtering of pixel values. Support for the amended claim language can be found throughout the application as filed. For example, reference paragraphs [0029] – [0044], [0046] & [0055]. Thus, no new matter is added to the application by any amendment presented.

In the Office Action, claims 1-5, 7-12 & 14-19 were rejected under 35 U.S.C. §102(e) as being anticipated by Sita et al. (U.S. Patent No. 6,539,120; hereinafter Sita). This rejection is respectfully, but most strenuously, traversed to any extent deemed applicable to the claims presented herewith, and reconsideration thereof is requested.

It is well settled that there is no anticipation of a claim unless a single prior art reference discloses: (1) all the same elements of the claimed invention; (2) found in the same situation as the claimed invention; (3) united in the same way as the claimed invention; and (4) in order to perform the identical function as the claimed invention. In this instance, Sita fails to disclose various aspects of Applicants' invention as recited in independent claims 1, 8 & 15, as well as

various dependent claims, and as a result, does not anticipate (or even render obvious) Applicants' invention.

Sita discloses an MPEG decoder which provides multiple standard output signals. A video decoder compliant with the Advanced Television Systems Standard (ATSC) includes circuitry which, when the decoder is operating in a first mode, decodes a Main Profile, High Level (MP@HL) image to produce a high-definition video output signal and decodes a Main Profile, Main Level (MP@ML) signal to produce a standard definition video signal. In addition, when the decoder is operated in a second mode, circuitry is used which generates a standard definition image from the MP@HL signal. The video decoder includes a frequency-domain filter to reduce the resolution of the MP@HL signal when the decoder is operated in the second mode. (See Abstract.)

With respect to Applicants' original independent claims, the Office Action cited Figure 2, as well as Figures 7a & 7b of Sita. Applicants submit that a careful review of these materials fails to uncover various aspects of their recited invention. For example, Applicants recite in their independent claims obtaining pixel values of the video frames prior to MPEG compression encoding of the video frames. In accordance with an aspect of Applicants' invention, functionality is provided for vertically filtering the pixels prior to their MPEG compression encoding. This is contrasted with the teachings of Sita, which relate to vertical filtering within a decoder. As noted at column 3, Fig. 2a of Sita is a high level block diagram of a video decoder, while Fig. 7a is block diagram illustrating a vertical programmable filter for the video decoder of Fig. 2a. For at least this reason, Applicants respectfully submit that there is no anticipation of their claimed invention based upon the teachings of Sita.

In addition to obtaining pixel values of the video frames prior to their MPEG compression encoding, Applicants' processing further recites programmably vertically filtering noise from the pixel values of the video frames prior to the MPEG compression encoding thereof. By applying the vertical filtering to the pixels of the video frames prior to their encoding, Applicants are able to vertically filter out even the noisiest of sources so that the encoded output is cleaner than the original (see paragraph [0059] of Applicants' Specification).

In Sita, vertical filtering is described within the environment of a decoder, and is depicted, for example, in Figs. 2a & 7a as cited in the Office Action. However, the vertical filtering taught by Sita is a <u>filtering to accomplish re-sampling of the video frames</u>. See column 31, line 23 through column 32, line 14 of Sita. Sita expressly teaches that the filters presented are to accommodate display conversion for a number of formats. See column 30, lines 53-55. Because the vertical filtering implemented by Sita within the decoder is configured for downsampling the video frames, Applicants respectfully submit that there is no teaching or suggestion of their recited independent claim functionality wherein there is a vertical filtering of noise from the pixel values of the video frames prior to their MPEG compression encoding. Filtering of noise does not result in picture size downsampling of an image, and downsampling of an image to change picture size does not inherently provide noise filtering. Because the vertical filters described in Sita are configured for different purposes, Applicants respectfully submit that their recited invention would not have been anticipated, or even rendered obvious, in view thereof.

In addition, Applicants respectfully submit that one of ordinary skill in the art would not have modified the Sita patent to somehow obtain programmable vertical noise filtering prior to MPEG compression encoding as recited in their invention. The purpose of the vertical filtering in Sita is to allow a decoder to support multiple formats. The vertical filtering or re-sampling in Sita is an integral part of accomplishing this objective. Therefore, one of ordinary skill in the art would not have been lead by the teachings in Sita to modify the vertical filtering described therein to obtain processing such as recited by Applicants in the independent claims presented.

For all the above reasons, Applicants respectfully submit that the independent claims presented herewith patentably distinguish over the applied art. Reconsideration and withdrawal of the anticipation rejection is therefore respectfully requested. The dependent claims are believed allowable for the same reasons as the independent claims from which they directly or ultimately depend, as well as for their own additional characterization. For example, dependent claims 3, 5, 7, 10, 12, 14, 17 & 19 are believed to recite patentable subject matter over the applied art.

In dependent claims 3, 10 & 17 Applicants further characterize their respective independent claims be reciting that the obtaining of vertical filter coefficients includes dynamically obtaining via a host interface new vertical filter coefficients during the programmably vertically filtering of pixel values. In accordance with Applicants' invention, coefficient registers can be loaded at initialization or dynamically via a host interface allowing, for example, a system user to change coefficients on a picture boundary as desired. Claims 7 & 14 further recite that the vertical filter coefficients are dynamically programmable per video frame of the sequence of video frames for enhancing encoding of the sequence of video frames. A careful reading of Sita fails to uncover various aspects of these claims.
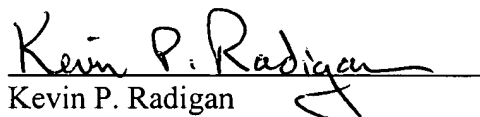
For example, there is no teaching or suggestion in Sita of dynamically obtaining new vertical filter coefficients via a host interface during the programmably vertical filtering of pixel values. In accordance with Applicants' invention, additional vertical filter coefficients can be loaded via the host interface. No similar teaching or suggestion is provided by Sita. In Sita, the term "programmable" refers to a design option to accommodate display conversions to a number of display formats. (See column 30, lines 53-55.) The coefficients for these formats reside in the LUM element 704 and CHR element 724 coefficient RAMs in Fig. 7a. The coefficient values for the different display formats are listed in Table 12, see columns 33 & 34. Thus, by "programmable" Sita means that there is a selection of a specific set of coefficients pre-loaded within the RAMs to perform specific display format conversions. In contrast, in Applicants' invention, there is a dynamic obtaining via a host interface new vertical filter coefficients during the programmably vertically filtering of pixel values. Further, in claims 7 & 14, Applicants recite that the vertical filter coefficients are dynamically programmable per video frame of the sequence of video frames. No similar function is described or suggested by Sita. In Sita, the vertical filtering is a re-sampling process in order to re-size the video frames. Applicants respectfully submit that one of ordinary skill in the art would not have read Sita as indicating that their downsampling filter would have a capability of re-sizing frames on a per frame basis in view of the purpose of Sita's filter.

Still further, Applicants recite in dependent claims 5, 12 & 19 that the programmably vertical filtering further includes <u>separating</u> luminance components and chrominance components of pixel values <u>in a vertical filter buffer</u>. Again, in accordance with their independent claims, Applicants recite obtaining the pixel values of the video frames prior to MPEG compression encoding of the video frames. In addition to this functionality, these dependent claims further indicate the separating of components of the pixel values in a vertical filter buffer. Applicants respectfully submit that a careful reading of Sita fails to uncover any analogous processing. The Office Action references Fig. 7a for an alleged teaching of this aspect of their invention, an in particular, elements 706-720. This characterization of the teachings of Sita is respectfully traversed. Elements 706-720 in Sita are MUXs and not vertical filter buffers accomplishing the functionality recited by Applicants in these claims. (See column 31, lines 9-22 of Sita.) In Sita, there is no separating of luminance and chrominance components in a vertical filter buffer *per se*.

For all the above reasons, Applicants respectfully submit that all claims are in condition for allowance and such action is respectfully requested.

Applicants' attorney is available should the Examiner wish to discuss this application further.

Respectfully submitted,

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